SANTA CRUZ BIOTECHNOLOGY, INC.

N-type Ca⁺⁺ CP α1B (A-11): sc-271010



BACKGROUND

N-type calcium channels are localized in high density presynaptic nerve N-type calcium channels are localized in high density presynaptic nerve terminals and are crucial elements in neuronal excitation-secretion coupling. Peripherally distributed N-type Ca²⁺ channel plays a key role in cardiovascular regulation through autonomic nervous system. The high-voltage activated Ca²⁺ channels that have been characterized biochemically are complexes of a pore-forming α -1 subunit; a transmembrane, disulfide-linked complex of α -2 and δ subunits; an intracellular β subunit; and in some cases, a transmembrane γ subunit. The α -1 subunit conducts N-type Ca²⁺ currents, which initiate rapid synaptic transmission. In addition to mediating Ca²⁺ entry to initiate transmitter release, N-type Ca²⁺ channels are thought to interact directly with proteins of the synaptic vesicle docking and fusion machinery. The synaptic protein interaction sites in the intracellular loop II-III of subunit α -1B of N-type Ca²⁺ channels bind to Syntaxin, SNAP-25 and Synaptotagmin.

REFERENCES

- Catterall, W.A. 1999. Interactions of presynaptic Ca²⁺ channels and snare proteins in neurotransmitter release. Ann. N.Y. Acad. Sci. 868: 144-159.
- Uneyama, H., et al. 1999. Pharmacology of N-type Ca²⁺ channels distributed in cardiovascular system. Int. J. Mol. Med. 3: 455-466.
- Fossier, P., et al. 1999. Calcium transients and neurotransmitter release at an identified synapse. Trends Neurosci. 22: 161-166.

CHROMOSOMAL LOCATION

Genetic locus: CACNA1B (human) mapping to 9q34.3.

SOURCE

N-type Ca⁺⁺ CP α 1B (A-11) is a mouse monoclonal antibody raised against amino acids 1841-1995 mapping near the C-terminus of N-type Ca⁺⁺ CP α 1B of human origin.

PRODUCT

Each vial contains 200 $\mu g\, lgG_3$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

N-type Ca⁺⁺ CP α 1B (A-11) is recommended for detection of N-type calcium channel α 1B of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for N-type Ca⁺⁺ CP α 1B siRNA (h): sc-42698, N-type Ca⁺⁺ CP α 1B shRNA Plasmid (h): sc-42698-SH and N-type Ca⁺⁺ CP α 1B shRNA (h) Lentiviral Particles: sc-42698-V.

Molecular Weight of N-type Ca++ CP a1B: 250 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, U-87 MG cell lysate: sc-2411 or IMR-32 cell lysate: sc-2409.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



N-type Ca⁺⁺ CP α1B (A-11): sc-2/1010. Western blot analysis of N-type Ca⁺⁺ CP α1B expression in IMR-32 whole cell lysate.

SELECT PRODUCT CITATIONS

- 1. Ronzitti, G., et al. 2014. Exogenous α -synuclein decreases raft partitioning of Ca_v2.2 channels inducing dopamine release. J. Neurosci. 34: 10603-10615.
- 2. Pitake, S., et al. 2019. Inflammation induced sensory nerve growth and pain hypersensitivity requires the N-Type calcium channel $Ca_v 2.2$. Front. Neurosci. 13: 1009.
- Pathe-Neuschäfer-Rube, A., et al. 2021. Cell-based reporter release assay to determine the activity of calcium-dependent neurotoxins and neuroactive pharmaceuticals. Toxins 13: 247.

STORAGE

Store at 4° C, **D0 NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.